**IN THE CLAIMS**

1.(Original) A method of maintaining additional security for communications between an upstream server and at least two downstream client modems on a shared communication media through use of a dynamic key generated by the particular client modems, the method comprising:

A. the server receiving a scrambled upstream communication from a first client modem;

B. the server unscrambling a scrambled portion of the upstream communication containing a new key for the first client modem using a previous seed for the first client modem based on a previous key for the first client modem received in a previous upstream communication from the first client modem;

C. the server storing information sufficient to create a new seed for the first client modem based on the new key for the first client modem based on the unscrambled contents of the upstream communication;

D. the server scrambling at least a portion of the next downstream communication to a second client modem with scrambling based on a seed for the second client modem based on a key for the second client modem, where in the key for the second client modem is unrelated to the key for the first client modem;

E. the server scrambling at least a portion of the next downstream communication to the first client modem with scrambling based on the new seed for the first client modem based on the new key for the first client modem;

F. the first client modem receiving the next downstream communication to the first client modem;

G. the first client modem unscrambling the scrambled portion of the next downstream communication to the first client modem with the new seed for the first client modem based on the new key for the first client modem;

H. the first client modem creating a next upstream communication containing a next key for the first client modem;

I. the first client modem storing information sufficient to create a next seed for the first client modem based on the next key for the first client modem; and

J. the first client modem scrambling at least a portion of the next upstream communication using the new seed for the first client modem based on the previously communicated new key for the first client modem.

2. (Original) The method of claim 1 wherein the new seed for the first client modem equals the new key for the first client modem.

3. (Original) The method of claim 1 wherein the new key for the first client modem is a transmission check word used for the purpose of testing the accuracy of the upstream transmission, such that the new key for the first client modem is transmitted with the upstream communication without adding to the overhead.

4. (Original) The method of claim 1 wherein the new key for the first client modem is a random number generated by the first client modem and not a transmission

check word .

5. (Original) The method of claim 1 wherein the scrambled portion of the upstream communication includes a portion of the data packet header.

6. (Original) The method of claim 5 wherein the scrambled portion of the upstream communication includes a field conveying the length of a variable length data packet.

7. (Original) The method of claim 1 wherein first client modem unscrambles the scrambled portion of the next downstream communication to the first client modem with the new seed for the first client modem based on the new key for the first client modem only when a field in the next downstream communication lacks a signal to use a default seed based on a default key.

8. (Original) The method of claim 7 where the default key is based on the address of the first client modem.

9. (Original) The method of claim 7 wherein the previous key for the first client modem received in a previous upstream communication from the first client modem was sent with scrambling based on the default key.

10. (Original) The method of claim 1 further comprising the preliminary steps of exchanging communications between the server and the first client modem, a portion of the preliminary communications scrambled with a default seed until the server has stored information sufficient to create an initial first client modem seed based on an initial first client modem key.

11. (Original) The method of claim 1 wherein a scrambled value is passed with one communication and the value is used to alter the DVB randomization of the next communication whereby the controlled variation in the DVB randomization provides a layer of security to protect the next communication from an eavesdropper as the eavesdropper would need the passed value in order to reverse the non-standard DVB randomization.

12. (Original) The method of claim 1 wherein:

the server sent a multicast address key and a multicast address in the next downstream communication to the first client modem;

the server sent the same multicast address key and the same multicast address in the next downstream communication to the second client modem;

and further comprising the step of:

the server creating a multicast communication addressed to a multicast group comprising the first client modem and the second client modem;

the server sending the multicast communication after scrambling a portion of the multicast communication with a seed based on the multicast address key.

13. (Original) The method of claim 1 wherein the server scrambles at least a portion of the next downstream communication to the first client modem with a seed based on both:

the new key for the first client modem, and

an earlier key for the first client modem received before the new key for the first client modem.

14. (Original) A method of maintaining additional security for communications between an upstream server and at least two downstream client modems on a shared communication media through use of a dynamic key generated by the server, the method comprising:

A. the server storing information sufficient to create a seed for the first client modem based on a key for the first client modem generated by the server, the key for the first client modem to be sent in a downstream communication to a first client modem;

B. a second client modem receiving a downstream communication from the server;

C. the second client modem unscrambling a scrambled portion of the downstream communication containing a new key for the second client modem using a seed for the second client modem based on a key for the second client modem received in a previous downstream communication from the server;

D. the second client modem storing information sufficient to create a new seed for the second client modem based on the new key for the second client modem received in the unscrambled contents of the downstream communication;

E. the second client modem scrambling at least a portion of the next upstream communication to the server with scrambling based on the new seed for the second client modem based on the new key for the second client modem;

F. the server receiving the next upstream communication from the second client modem;

G. the server unscrambling the scrambled portion of the next upstream communication

from the second client modem with the new seed for the second client modem based on the new key for the second client modem;

H. the server creating a next downstream communication containing a next key for the second client modem;

I. the server storing information sufficient to create a next seed for the second client modem based on the next key for the second client modem without impacting the previously stored information sufficient to create the seed for the first client modem based on the first client modem key; and

J. the server scrambling at least a portion of the next downstream communication using the new seed for the second client modem based on the previously communicated new key for the second client modem.

15. (Currently amended) A method of dynamic double scrambling of communications sent to and from a particular client modem; the method comprising the steps of:

A. a server identifies the existence and the address of first client modem on a

shared transmission media;

B. the server creates and transmits a downstream communication addressed to the first client modem with a portion of the downstream communication scrambled twice based on two default scrambling seeds, the downstream communication containing a control field indicating that the default seeds were used;

C. the first client modem receives the downstream communication and recognizes that the default seeds were used;

D. the first client modem unscrambles the downstream communication using the default seeds;

E. the first client modem creates and transmits an upstream communication, before transmission the upstream communication scrambled twice with the two default seeds, the scrambled portion of the upstream communication containing a key created by the first client modem;

F. the server receives the upstream communication and the server unscrambles the scrambled portion of the upstream communication using the default seeds and stores the key created by the first client modem;

G. the server creates and transmits a downstream communication addressed to the first client modem with the control field indicating that the communication is scrambled using one default scrambling seed and one seed based on the key created by the first client modem, a portion of the downstream communication scrambled once with one default seed and once with one seed based on the key created by the first client modem, the scrambled portion of the downstream communication including a key created by the server for communication with the first client modem;

H. the first client modem receives the downstream communication and reads the control field;

I. the first client modem unscrambles the downstream communication using the one default seed and one seed based on the last transmitted key created by the first client modem;

J. the first client modem stores the key created by the server for communication with the first client modem;

K. the first client modem creates and transmits an upstream communication, before transmission a portion of the upstream communication including the new key created by the first client modem is scrambled twice using the one seed based on the last transmitted key created by the first client modem and one seed based on the last transmitted server created key for communication with the first client modem;

L. the server receives the upstream communication, and unscrambles the upstream communication using one seed based on the previously stored key created by the first client modem and one seed based on the last transmitted server created key for communications with the first client modem;

M. the server stores the last transmitted key created by the first client modem;

N. the server creates and transmits a downstream communication addressed to the first client modem with the control field indicating that the communication is scrambled using one seed based on the last transmitted key created by the first client modem and one seed based on the last transmitted server created key for communication with the first client modem; a portion of the downstream communication scrambled once with one seed based on the last transmitted key created by the first client modem and

once with one seed based on the last transmitted server created key for communication with the first client, the scrambled portion of the downstream communication containing a new server created key for communication with the first client modem;

O. the first client modem receives the downstream communication and reads the control field;

P. the first client modem unscrambles the downstream communication using one seed based on the previously stored server created key for communication with the first client modem and one seed based on the last transmitted key created by the first client modem;

Q. the first client modem stores the last transmitted server created key for communication with the first client modem,

REPEAT steps K through Q ~~G~~;

UNTIL detecting a break in the communications between the first client modem and the server;

THEN GOTO Step B.

16. (Original) The method of claim 15 wherein the key created by the first client modem is a transmission check word.

17. (Original) The method of claim 15 wherein at least one of the default seeds is used solely for communications with the first client modem.

18. (Original) The method of claim 15 wherein at least one of the default seeds is derived from an address of the first client modem.

19. (Currently amended) A method of updating the keys used by a first device in a dynamic dual key scrambling system with the dual keys including ~~of~~ a key created by a first device and a key created by a second device, the updating occurring when an incoming communication received at the first device contains a unique address for the first device and the incoming communication indicates the completion of the start up sequence to establish dynamic dual key scrambling between the first device and the ~~a~~ second device, the method comprising:

A. Unscramble the scrambled portion of the incoming communication with ~~the~~ a stored key created by the first device and a stored key created by the second device;

B. Store key created by the second device received in the scrambled portion of the incoming communication;

C. Create a new key created at ~~by~~ the first device and include the new key in ~~and create~~ an ~~the~~ outgoing communication from the first device;

D. Scramble portions of the outgoing communication including the new key created by the first device with the stored key from the first device and the stored key from the second device;

E. Store key created by the first device; and

F. Send outgoing communication.

20. (Original) The method of claim 19 wherein:

the stored key created by the first device used in the scrambling and unscrambling

operations is the most recently stored key created by the first device, and

the stored key created by the second device used in the scrambling and unscrambling operations is the most recently stored key created by the second device.

21. (Original) The method of claim 19 wherein the stored key created by the first device used in the scrambling and unscrambling operations is not the most recently stored key created by the first device.

22. (Original) The method of claim 19 wherein the stored key created by the second device used in the scrambling and unscrambling operations is not the most recently stored key created by the second device.